

Use ens checker

INTRODUCTION

This program attempts to check the integrity of the EnSight6 or EnSight Gold file formats. Most files that pass this check will be able to be read by EnSight (see Other Notes below). If EnSight6 or EnSight Gold data fails to read into Ensight, one should run it through this checker to see if any problems are found.

Ens_checker makes no attempt to check the validity of floating point values, such as coordinates, results, etc. It is just checking the existence and format of such.

BASIC OPERATION

Program invocation:

If you invoke the program without any arguments, it will prompt you for the casefile to read. For example:

> ens checker

You can alternatively invoke the program with the casefile on the command line.

```
> ens_checker mydata.case
```

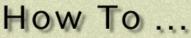
Sample runs:

As ens_checker works it will be providing feedback. This feedback is important in interpreting what is wrong in the files. Here is a sample run, which was successful:

```
> ens_checker 3by3.case
*****************
* EnSight Data Format Checker
   Currently,
   1. Must be run from directory in which casefile is located.
   2. Handles EnSight6 and EnSight Gold formats only.
   3. Does not process SOS casefiles.
*****************
<Enter casefile name (must be in directory containing it!) > 3by3.case
Casefile to Process:
3by3.case (Opened successfully)
Major Sections Found:
Required FORMAT section (at line 1)
Required GEOMETRY section (at line 4)
Optional VARIABLE section
                         (at line 7)
Optional TIME
              section
                         (at line 11)
FORMAT Section:
EnSight 6 Format (set at line 2)
```









```
TIME section:
Info for timeset number: 1
Time set: 1 (at line 12)
  No description provided
  Number of steps:
                     1
                           (at line 13)
  Time values:
                        (starting on line 14)
                        time values[1] = 0
  >----<
  > TIME section OKAY <
_____
GEOMETRY Section:
Model filename is:
                   3by3.geo
                                (at line 5)
   Static geometry
   Opened 3by3.geo successfully
   File type is:
                  ASCII
  Description 1:
                 EnSight test geometry file
  Description 2: ===========
                 assign
assign
  node ids:
   element ids:
  Global section:
     Number of nodes: 64
        Coordinates for (64) nodes found
   Part 1:
     Description is: 3 x 3 xy
     Unstructured Part
     Number of quad4 elements is: 9
        Connectivities for (9) quad4 elements found
   Part 2:
     Description is: 3 x 3 yz
     Unstructured Part
     Number of quad4 elements is: 9
        Connectivities for (9) quad4 elements found
   Part 3.
     Description is: 3 x 3 xz
     Unstructured Part
     Number of quad4 elements is: 9
        Connectivities for (9) quad4 elements found
   Part 4:
     Description is: 3 x 3 45
     Unstructured Part
     Number of quad4 elements is: 9
        Connectivities for (9) quad4 elements found
  >-----
  > GEOMETRY section OKAY <
VARIABLE Section:
scalar per node:
                            (at line 8)
                 scalar
   Filename is: 3by3.scl
   Non transient variable
```





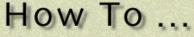
```
Opened 3by3.scl successfully
  Description: 3by3 scalar variable
  Global section:
     (64) Nodal scalar values for unstructured nodes found
vector per node:
                vector
                           (at line 9)
  Filename is: 3by3.vct
  Non transient variable
  Opened 3by3.vct successfully
  Description: 3by3 vector variable
  Global section:
     (192) Nodal vector values for unstructured nodes found
 > VARIABLE section OKAY <
                    >----- Hooray! -----<
                    > Data verification SUCCESSFUL <
                           with No Warnings
                    >-----
```

And here is a sample run, with a problem, namely a 'block' line is missing:

```
*****************
* EnSight Data Format Checker
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   1. Must be run from directory in which casefile is located. *
   2. Handles EnSight6 and EnSight Gold formats only.
   3. Does not process SOS casefiles.
Casefile to Process:
______
3by3s.case (Opened successfully)
______
Major Sections Found:
Required FORMAT section (at line 1)
Required GEOMETRY section (at line 4)
              LE section (at line 7) section (at line 11)
Optional VARIABLE section
Optional TIME
FORMAT Section:
EnSight 6 Format (set at line 2)
TIME section:
Info for timeset number: 1
```



> ens checker 3by3s.case





```
(at line 12)
  No description provided
                      1
  Number of steps:
                           (at line 13)
  Time values:
                       (starting on line 14)
                       time values[1] = 0
 > TIME section OKAY <
GEOMETRY Section:
Model filename is: 3by3s.geo
                               (at line 5)
  Static geometry
  Opened 3by3s.geo successfully
                 ASCII
  File type is:
  Description 1:
                EnSight test geometry file
  Description 2:
                 node ids:
                 assign
  element ids:
                 assign
  Global section:
    Number of nodes: 0
  Part 1:
     Description is: 3 x 3 xy block
     Structured Part
     Not iblanked
     ijk = 441
     Number of nodes: 16
     Number of cells: 9
        Block X coordinates for (16) nodes found
        Block Y coordinates for (16) nodes found
        Block Z coordinates for (16) nodes found
     Description is: 3 x 3 yz block
===> Problem:
Looking for one of the following valid line types:
  element type
                   (unstructured types, any of the following:
                                      tetra10
                                                penta15
                      point tria6
                              quad4
                                       pyramid5
                      bar2
                                                  hexa8
                              quad8
                      bar3
                                      pyramid13 hexa20
                              tetra4
                      tria3
                                     penta6
                   (structured block)
  block
                   (the next part)
but found the following:
  >-----
 > GEOMETRY section FAILED <
 >-*-*-*-* bummer! *-*-*-*-<
  > Verification of the data FAILED <
  >-*-*-*-*-*-
```

After fixing the 'block' line and running the program again, another problem is encountered - namely, an extra space









at the end of the second line of x coordinates for the block that is part 2.

```
> ens checker 3by3s.case
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   2. Handles EnSight6 and EnSight Gold formats only.
   3. Does not process SOS casefiles.
Casefile to Process:
3by3s.case (Opened successfully)
Major Sections Found:
______
                         (at line 1) (at line 4)
Required FORMAT section
Required GEOMETRY section
Optional VARIABLE section (at line 7)
Optional TIME section (at line 11)
FORMAT Section:
EnSight 6 Format (set at line 2)
TIME section:
Info for timeset number: 1
Time set: 1 (at line 12)
  No description provided
  Number of steps: 1 (at line 13)
Time values: (starting on line 14)
                       time values[1] = 0
  > TIME section OKAY <
GEOMETRY Section:
Model filename is: 3by3s.geo
                                (at line 5)
  Static geometry
  Opened 3by3s.geo successfully
  File type is:
                 ASCII
  Description 1: EnSight test geometry file
  node ids:
   element ids:
   Global section:
    Number of nodes: 0
     Description is: 3 x 3 xy block
     Structured Part
     Not iblanked
      i j k = 4 4 1
     Number of nodes: 16
```





```
Number of cells: 9
        Block X coordinates for (16) nodes found
        Block Y coordinates for (16) nodes found
        Block Z coordinates for (16) nodes found
   Part 2:
     Description is: 3 x 3 yz block
     Structured Part
     Not iblanked
      i j k = 4 4 1
     Number of nodes: 16
     Number of cells: 9
===> Problem:
Previous lines end with 1 extra chars on the line,
but line 2 has 2 extra chars. The lines must be consistent
or EnSight will have trouble reading it.
===> Problem:
Not successful reading 16 X block coordinates
  > GEOMETRY section FAILED <
  >-----
  >-*-*-*-* bummer! *-*-*-*-<
  > Verification of the data FAILED <
  >-*-*-*-*-*-*-*-*-*-*-*-*-*-*-
```

After eliminating the extra space, the file then checked out fine.

ADVANCED USAGE

Redirecting Output to a File:

ens checker is writing to stderr, so if you want to redirect output to a file, you need to use ">&". For example, the following will place the output of the run into a file called output.file:

```
> ens checker 3by3.case >& output.file
```

OTHER NOTES

The word "most" is used above because one of the things that could pass the checker, but fail in EnSight is element connectivity of EnSight6 files with node ids. The ens_checker checks that node ids used in the element connectivities lie within the min and max range of the node ids, but does not verify that there is actually a node with each individual id.

The validity of model extents, presence of nan's, etc. are currently checked to some degree in ens_checker, but again, this is a format checker - not a model integrity checker.

SEE ALSO

User Manual:

EnSight Gold Casefile Format EnSight6 Casefile Format



